

from Kobe for Seattle on the 1st, and at noon of the 5th (G. M. T.) was in 47° N., 169° E. At 1 a. m. (S. M. T.) of that day, reports Mr. Van Dusen, the barometer was falling slowly, wind sluggish easterly, later veering to south. By noon the wind had increased to a fresh gale from SW. At 10 a. m. of the 6th the barometer reached its lowest point, 29.45 inches and the wind attained force 10, S. Conditions indicated to observers aboard the vessel that the storm was traveling eastward at the same speed as the ship, about 400 miles a day.

Pressure at Dutch Harbor was generally above normal from the 5th to the 19th, the average departure for this period being 0.20 inch. The highest pressure, 30.54 inches, occurred on the 12th. During the remainder of the month the average negative departure was about 0.65 inch. At Midway Island pressure was above normal generally throughout the month, the daily average excess being some 0.09 inch. Pressure at Honolulu averaged slightly below normal.

HURRICANE IN SOUTH PACIFIC OCEAN.

During the period extending from January 15 to 24, 1922, a hurricane prevailed in the western part of the South Pacific Ocean. Forming to the eastward of the Solomon Islands, probably sometime prior to the 15th, it moved on a west-southwest course, and on the 17th and 18th recurved about midway between the New Hebrides Islands and the coast of Australia. It thence moved to the southeastward, traveling at moderate speed, and passed between New Caledonia and Norfolk Island. On the 24th the center was somewhat to the north of New Zealand.

The following report of the hurricane has been received from the British S. S. *Waihora*, on voyage from Newcastle, N. S. W., to Nauru Island, located in about 1° S., 167° E. The correction for the barometer, an aneroid, is not known, but it is stated that the readings are probably below standard.

January 10.—8 a. m., cleared Newcastle in ballast. Experienced moderate to fresh easterly winds with slight sea to 15th. Fine and clear.

January 15.—Noon, lat. 16° S., long. $159^{\circ} 27'$ E. Bar. 29.64, ther. 78° . Wind freshening from SE. by E. (true). Rough sea, cloudy, fine.

4 p. m. Strong breeze, rough sea, cloudy, clear; bar. 29.56, ther. 77° .

6 p. m. Weather indications bad. Furling all awnings and battened down. Sunset coloring of clouds to westward a tawny or bronze color and streaked with broad patches of green of all shades.

8 p. m. Bar. 29.55, ther. 75° . Becoming squally.

12 p. m. Strong breeze from SE. by E. (true). Rough, increasing sea, heavy rain squalls, cloudy overcast sky.

January 16.—2:50 a. m. Wind still SE. by E., steadily increasing, with falling glass and increasing sea. Every indication that hurricane was approaching, with exception that the sea remained true to wind. Stood to westward.

4 a. m. Bar. 29.35, ther. 75° . Wind SE. by E., gale force, heavy rain squalls. Sea increasing and becoming confused; rolling heavily. Speed reduced to 5 knots owing to racing.

8 a. m. Bar. 29.31, ther. 75° . Strong gale SE. by E. Heavy driving rain squalls.

Noon. Bar. 29.14, ther. 74° . Heavy gale SE. by E. Heavy easterly sea making itself apparent, but main sea still true to wind.

4 p. m. Bar. 28.89, ther. 74° . Very heavy gale from SE. by E. Very heavy, confused, dangerous sea. Thick driving rain squalls of hurricane force.

8 p. m. Bar. 28.65, ther. 73° . Wind and sea still increasing with hurricane squalls. Wind veering SSE.

9 p. m. Bar. 28.60, vibrating wildly over a full tenth. Wind S.

10 p. m. Bar. 28.46.

10:11 p. m. Hurricane at its height.

11 p. m. Bar. 28.40.

12 p. m. Bar. 28.44 and steady, ther. 73° . Wind hurricane force, from SSW. Sea mountainous and confused. Wind force converting wave break into a stinging spindrift.

January 17.—4 a. m. Bar. 28.80, ther. 74° . Fierce gale with mountainous, confused sea.

8 a. m. Bar. 29.15, ther. 75° . Wind NW., gradually moderating and sea falling.

You will notice from above extracts that there was very little warning of an approaching hurricane.

The sunset sky was the most definite, along with the steadily falling barometer. There was a total absence of swell not accounted for by wind prevailing, possibly owing to intervening islands and reefs. I ran approximately 80 miles in a WNW. (mag.) direction, before the center of the storm passed, making my position at that time $15^{\circ} 1'$ S., $158^{\circ} 28'$ E. As I could not change the direction of the wind from SE. by E. (true) and could not increase speed owing to the light condition of the ship, I concluded that the center must pass over me. This I evidently only just avoided. The rapid fall in barometer, the wild vibrating, especially from 8 p. m. to 11 p. m., the sudden changes of wind from SE. by E. through S. to NW., the dull green patch of sky visible astern for a short time between squalls, seemed to indicate that the ship was very close to it. While no calm was experienced, there was just a sensible easing of wind force between 11:30 and 12 p. m., and a dense black pall seemed to almost touch the mastheads. The S. S. *Bulga* (Australian Commonwealth Line) experienced this hurricane on 18th in vicinity of Cato Reefs.

A cyclonic storm in which the American schooner *Helen B. Sterling* was lost in $31^{\circ} 10'$ S. and 170° E. on January 23 appears to have been the same gale and would indicate with *Bulga's* position the rate of progression.

The Italian cruiser *Libia*, proceeding from Suva to Sydney, crossed in front of the hurricane on the 17th–19th. Throughout the whole of the voyage, extending from the 16th to the 21st, the wind held between E. by S. and SSE., reaching force 10, SE. by S., on the 18th and 19th. The lowest barometer recorded at any Greenwich mean noon observation was 29.65 inches on the 18th.—*F. G. T.*

NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

British Isles.—The rainfall of April was above the average for the period 1881–1915 nearly everywhere in the British Isles, the only exceptions being in the northwest of Great Britain.¹

Norway.—A violent snowstorm was experienced at Hammerfest on the 11th.¹

Russia.—RIGA, April 14.—Twenty thousand persons are affected by the flood of the Dvina River, caused by the damming of the river by the ice jam. * * *

Eight villages were reported under water, and thousands of inhabitants clinging to house tops were being rescued as rapidly as possible by boats. Army aviators dropped bombs on the clogged ice, somewhat relieving the congestion of the flood.—*Star-Gazette, Elmira, N. Y., April 14, 1922.*

France.—PARIS, April 11.—Navigation in the Seine through Paris was at a standstill to-day because of the abnormal rise of the river. Several neighboring municipalities were flooded, and some of them reported great losses of property and cattle.—*Associated Press, April 11, 1922.*

Switzerland.—Heavy rains in Switzerland at the beginning of the month caused a serious landslide near Le Bouveret (Valais) in the Rhone Valley.¹

Australia.—The dry spell which has been causing anxiety to farmers in some parts of Australia was broken toward the end of April by rains in South Australia and New South Wales.¹

Brazil.—The special message from Brazil states that rainfall was excessive over the northern region, the excess being on the average 180 mm. * * * but 300 to 600 mm. in certain stations. There were destructive floods in Amazonas, Ceara, and Alagoas States.¹

¹ *The Meteorological Magazine, May, 1922.*